

Amendments to the Claims:

1-67. (canceled)

68. (currently amended) A method for altering the amino acid composition of a vegetative storage protein[[],] which is VSP β , said method comprising:

- a) introducing amino acid changes into ~~said protein~~ VSP β to create an engineered protein, wherein said amino acid changes alter the content of nutritionally essential amino acids ~~in said protein~~ by at least ~~5%~~ 10%; and
- b) assessing the conformation of said engineered protein based on its ability to bind with a set of antibodies ~~capable of binding with the native protein~~, wherein said antibodies ~~recognize the native conformation of said bind to the native protein~~;

wherein said antibodies also bind to the engineered protein.

69. (currently amended) A method for altering the amino acid composition of a VSP β , said method comprising:

- a) introducing amino acid changes into VSP β to create an engineered VSP β having increased nutritional value, wherein said amino acid changes increase levels of at least one nutritionally essential amino acid in the engineered VSP β so that nutritionally essential amino acids are increased to represent at least 5% - 10% of the total amino acid content of the engineered VSP β ; and
- b) assessing the conformation of said engineered VSP β based on its ability to bind with a set of antibodies ~~capable of binding with native VSP β~~ , wherein said antibodies ~~recognize the native conformation of said bind to native VSP β~~ ;

wherein said antibodies also bind to the engineered protein.

70. (canceled)

71. (previously presented) The method of Claim 68, wherein said antibodies are monoclonal antibodies.

72-74. (canceled)

75. (previously presented) The method of Claim 69, wherein at least one of said at least one nutritionally essential amino acid or nutritionally essential amino acids is methionine.

76. (previously presented) The method of Claim 69, wherein said amino acid changes are introduced into predetermined sites.

77. (previously presented) The method of Claim 76, wherein said predetermined sites are determined by secondary structure prediction or homology comparison.

78. (previously presented) The method of Claim 69, wherein said amino acid changes are introduced at random.

79. (previously presented) The method of Claim 78, wherein said amino acid changes are produced by mutagenic PCR or DNA shuffling, wherein said mutagenic PCR or DNA shuffling is optionally used in combination with phage display methodology.

80-125. (canceled)